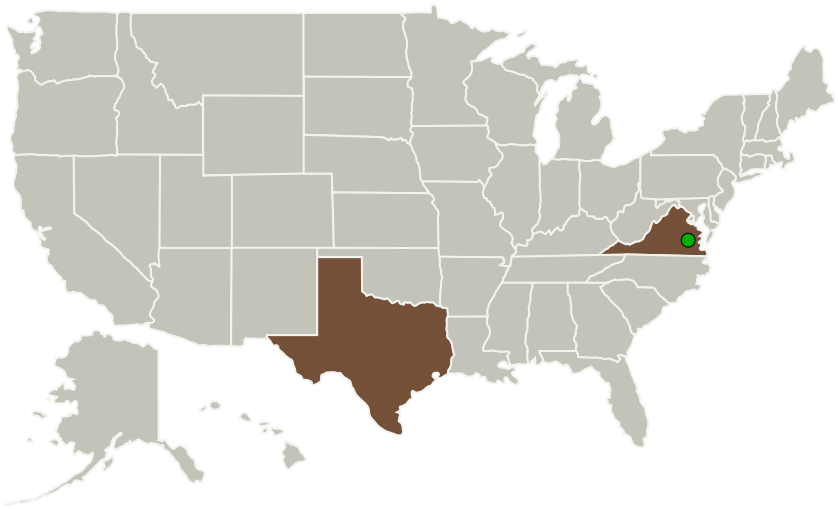
Surface-Borne Time-of-Reception Measurements (STORM), Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Invocon proposes the Surface-borne Time-Of-Reception Measurements (STORM) system as a method to locate the position of lightning strikes on aerospace vehicles. Initially developed as a hypervelocity impact location system, the baseline technology lends itself to simple adaptation for lightning location. It uses Time-Of-Arrival (TOA) measurements of the charge wave front imparted on a structure to triangulate the location of lightning attachment. Additional capability can be added to the triggering circuitry that will characterize the lightning strike in order to increase situational awareness for flight crews and provide maintenance crews with information vital to determine the health of an aircraft. This is particularly important for new airframes manufactured from composite materials that have not be fully characterized over the full lifetime of the aircraft.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Invocon, Inc.	Lead Organization	Industry Veteran-Owned Small Business (VOSB)	Conroe, Texas
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

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Primary U.S. Work Locations	
Texas	Virginia

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139377)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Invocon, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Doug Heermann

Co-Investigator:

Doug Heermann

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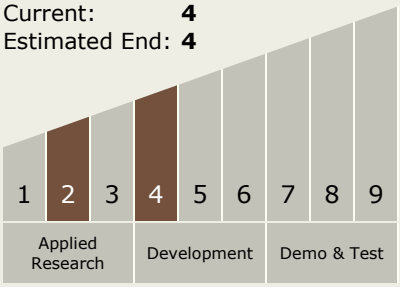
Completed Technology Project (2010 - 2010)

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX13 Ground, Test, and Surface Systems
  - TX13.1 Infrastructure Optimization
    - TX13.1.6 Test, Operations, and Systems Safety

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System